UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,141	07/02/2003	Kyung-Hun Jang	784-52(SI-18902-US)	3347

28249   7590   11/28/2007

DILWORTH & BARRESE, LLP
333 EARLE OVINGTON BLVD.
SUITE 702
UNIONDALE, NY 11553

EXAMINER
DAVENPORT, MON CHERI S

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/612,141	JANG ET AL.
Office Action Summary	Examiner	Art Unit	
	Mon Cheri S. Davenport	2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 November 2007</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-13* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)　　　　　　　Office Action Summary　　　　　　　Part of Paper No./Mail Date 20071115

Claim Rejections - 35 USC § 101

Claim 10 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 10, claim 10 lacks the proper preamble language for statutory computer program product. See MPEP 2100 for guidance on computer related inventions.

The examiner suggest a preamble as follows:

" A computer readable medium containing computer executable instructions to perform a method, the method comprising:"

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 3 and 10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 3 and 10, is in unclear what is meant by " the number of groups of wireless terminals", and " the number of multicast <u>packet</u> in each group, the multicast packet being to be transmitted".

Claim Rejections - 35 USC § 102

1.   **Claims 4, 5, and 12** rejected under 35 U.S.C. 102(b) as being anticipated by Paul et al.

(Reliable Multicast Transport Protocol (RMTP))

Regarding **claim 4** Paul et al. discloses a multicast data retransmission method used in a

system that retransmits multicast packets by using a wireless terminal and an access point, the

multicast data retransmission method comprising the steps of:

(a) receiving from the access point information on a group which the wireless terminal

belongs to*(see Paul et al., page 409, paragraph 2, RMTP groups receivers into local regions*

and uses a DR as a representative of the local region) ;

(b) if the wireless terminal is selected as a repeater that is to retransmit the multicast

packets, receiving information from the access point about the order in which repeaters

retransmit the multicast packets *(see Paul et al., page 409, column 1, paragraph 2, RMTP*

provides sequenced, lossless delivery of bulk data from one sender to a group of receivers. The

sender ensures reliable delivery by selectively retransmitting lost packets in response to the

retransmission request of the receiver.); and

(c) receiving a retransmission command from the access point and retransmitting the

multicast packets to other wireless terminals, irrespective of whether the wireless terminals

receive the multicast packets *(see Paul et al., page 409, paragraph 2, only the DR's send their*

own status to the sender indicating which packets they have received and which packets they

have not received. The receivers in a local region send their status to the corresponding DR,

see also page 410, paragraph 3(section A. overview), S (access point) determines which

packets are to be retransmitted , and the packets are multicasted globally by S).

Regarding **claim 5**, Paul et al. discloses everything claimed as applied above (*see claim 4*) In addition the method includes:

wherein step (b) further comprises the step of, if the wireless terminal is not selected as the repeater, receiving the retransmitted multicast packets and discarding the retransmitted multicast packets if the multicast packets have already been received without a packet error *(see Paul et al., page 413, column 2, paragraph 6, if DR selected by a set of receivers fail, then the same set of receivers will choose the DR least upstream from the failed DR as the new AP(Access point).*

Regarding **claim 12**, Paul et al. discloses everything claimed as applied above (*see claim 4*) In addition:

A computer readable medium having embodied thereon a computer program for the multicast data retransmission method of claim 4(*(see Paul et al., page 415, paragraph 3, a multicast delivery system at user level using Mbone technologies, Mbone routers use IP tunnels to forward multicast packets to IP routers that cannot handle multicast packets)*.

2.   **Claims 8-9** rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (European Patent Application Number 01303442.6).

Regarding *claim 8* Sato et al. discloses an apparatus for multicast data retransmission, the apparatus comprising *(see Sato et al., figure 5)*:

a grouping unit which groups wireless terminals based on distances between the wireless

terminals *(see Sato et al., page 3 , paragraph [0021], grouping radio terminals in the service*

area, and amplitudes of signals output from the wireless terminals *(Sato et al. Figure 5, element*

25, retransmission permitted –terminal determining unit);

a repeater selecting and retransmission order arranging unit which selects the repeater to

retransmit the multicast packets from each group(see [0022], a retransmission control,

determines (selects a radio terminal (repeater) on the basis of quality of communication to

delivery information to the radio terminals), and arranges the order in which repeaters retransmit

the multicast packets *(Sato et al., Figure 5, element 24, information delivery control unit,*

performs a control to retransmit multicast information, see [0038], the information delivery

control unit controls what and how the packets are multicast, the multicast information is

stored in the memory unit under the control of element 24) ;

a multicast packet train header creating unit which creates a multicast packet train header

before the multicast packets are multicasted *(Sato et al. , Figure 5, element 22, multicast*

information memory unit, see [0038], the multicast information is stored in the memory unit

under the control of element 24)) ;

a multicast packet train header transmitting unit which transmits the created multicast

packet train header to all wireless terminals*(Sato et al. , Figure 5, element 21,Transmitter /*

receiver); and

a retransmitting unit which retransmits the multicast packets in the order arranged by the

repeater selecting and retransmission order arranging unit, after the multicast packet train header

transmitting unit multicasts the multicast packet train header(*Sato et al., Figure 5, element 24, information delivery control unit, performs a control to retransmit multicast information*).

Regarding **claim 9**, Sato et al. discloses everything claimed as applied above (*see claim 8*) In addition the apparatus includes:

wherein the retransmitting unit transmits the retransmission command to a repeater, which is first to retransmit the multicast packet, and transmits the retransmission command to a repeater which is second to retransmit the multicast packet*(see Sato et al. , page 3, column 4, paragraph [0027], a first unit determining at least one radio terminal permitted to be placed in retransmission control ; and a second unit delivering , when a request for retransmitting the multicast information sent by the above mentioned at least one radio terminal is received, the multicast information to the radio terminals).*

3.   **Claim 10** rejected under 35 U.S.C. 102(e) as being anticipated by Muzutani et al. (US Patent Number 7,065,066)

Regarding **claim 10** Muzutani et al. discloses a structure of a multicast packet train header used in multicast data transmission, the structure of multicast packet train header comprising *(see Muzutani et al., Figure 3, element 30, header):*

multicast train ID information which is used to identify a multicast packet train *(see Figure 3, element 31, packet ID);*

information about the number of groups of wireless terminals, the wireless terminals

being connected to a wireless network and receiving the multicast packets *(see Figure 4,*

element 11, Group management table, Group #, Terminal ID);

information about the number of multicast packet in each group which indicates the

number of multicast packet in each group, the multicast packet being to be transmitted after the

multicast packet train header is multicasted *(See figure 3, element 30, header and Figure 4,*

element 11, group management table); and

forward error correction information which is used to correct an error of the multicast

packet train header *(see figure 3, element 37, Error correction code).*

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   **Claims 1-2 and 11** rejected under 35 U.S.C. 103(a) as being unpatentable over by Paul et

al. (Reliable Multicast Transport Protocol (RMTP)) in view of Toshimitsu et al. (US Patent

Application Publication 2002/0021684).

Regarding **Claim 1** Paul et al. discloses a multicast data retransmission method,

comprising the steps of:

(a) grouping wireless terminals based on distances between an access point and the

wireless terminals *(see Paul et al., page 413, column 2, paragraph 3-4, Choice of*

DR(designated receiver) and formation of local regions: each receiver chooses a DR that is

nearest to it in terms of number of hops, effectively a local region is defined) ;

(b) selecting a repeater **(designated receiver)** to retransmit multicast packets from each

group*(see Paul et al., page 413, column 2, paragraph 3-4, Choice of DR(designated receiver)*

and formation of local regions: each receiver chooses a DR that is nearest to it in terms of

number of hops, see page 407, paragraph 1, lines 5-10, designated receivers (DR) which is

*responsible for retransmitting lost packets to the corresponding receivers)*and arranging the

order in which repeaters retransmit multicast packets*(see Paul et al., page 408, column 1,*

paragraph 3, the function of RMTP is to deliver packets from the sender to the receivers in

sequence along the multicast tree);

Paul et al. discloses (c) creating a multicast packet train header indicating characteristics

of each of the multicast packets *(see Paul et al., page 410, column 1, paragraph 4, the sender in*

RMTP divides the data to be transmitted into fixed-sized data packets, see Table 1(RMTP

Packet types), page 410);

Paul et al. discloses (d) multicasting each of the multicast packets including the created

multicast packet train header *(see Paul et al., page 410, column 1, paragraph 3, lines 6-7, S*

multicast a window of data packets to all receivers using the global multicast tree); and

Paul et al. discloses e) retransmitting the multicast packets in the order arranged in step

(b), irrespective of whether the wireless terminals receive the multicast packets *(see Paul et al.,*

page 414, column 1, paragraph 2, DR's retransmit lost packets to the receivers in there

respective local regions, see also page 410, paragraph 3(section A. overview), S (access point)

determines which packets are to be retransmitted, and the packets are multicasted globally by

S).

However Paul et al. fails to specifically point out grouping wireless terminals based on amplitudes of signals output from the wireless terminals as claimed.

Toshimitsu et al. disclose grouping wireless terminals based on amplitudes of signals output from the wireless terminals (see [0113], lines 1-2, grouping of radio terminals according to their weights (signal amplitudes), see also [0040], lines 6-8, and weights is amplitude weighted).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to combine Paul with Toshimitsu et al. because this assures that packets are multicast reliable.

Regarding **Claim 2**, Paul et al. discloses everything claimed as applied above (*see claim 1*) In addition the method includes:

wherein step (b) further comprises the step of selecting a wireless terminal, which outputs a signal with the greatest amplitude , as the repeater **(DR)** from each group by determining a status of a channel of the wireless terminal based on the amplitude of signal output from the wireless terminal *(see Paul et al., page 413, column 2, paragraph 4-6, each DR as well as the sender periodically sends a special packet , called the SEND_ACK_TOME packet which*

includes a TTL(time-to-live field), it will have then chosen the DR nearest to it in terms of number of hops).

However Paul et al. fails to specifically point out selecting a wireless terminal, which outputs a signal with the greatest amplitude, as the repeater, and determining a status of a channel of the wireless terminal based on the amplitude of signal output from the wireless terminal as claimed.

Toshimitsu et al. disclose grouping wireless terminals based on amplitudes of signals output from the wireless terminals (see [0113], lines 1-2, grouping of radio terminals according to their weights (signal amplitudes), see also [0040], lines 6-8, and weights is amplitude weighted).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to combine Paul et al with Toshimitsu et al. because the DR (repeater) entity is a combination of sender entity and receiver entity, key functions are performed, therefore the transceiver that obtains the highest quality resources should be chosen as the repeater (see Paul et al. pg. 41, col. 2, paragraph 3, lines 1-3).

Regarding **claim 11**, Paul et al. discloses everything claimed as applied above (*see claim 1*) In addition:

A computer readable medium having embodied thereon a computer program for the multicast data retransmission method of claim 1 (see Paul et al., page 415, paragraph 3, a

multicast delivery system at user level using Mbone technologies, Mbone routers use IP tunnels

to forward multicast packets to IP routers that cannot handle multicast packets).

4.   **Claim 3** rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al. (Reliable

Multicast Transport Protocol (RMTP)) and Toshimitsu et al. in view of Mizutani et al. (US

Patent Number 7,065,066).

Regarding **claim 3**, Paul et al. discloses everything claimed as applied above (*see claim*

1) In addition the method includes:

wherein the multicast packet train header comprises *(see Paul et al., Page 410, Table 1):*

Paul et al. discloses information about the number of multicast packets in each group, the

multicast packet being transmitted after the multicast packet train header is multicasted*(see Paul*

et al. page 409, Paragraph 2, the receivers in a local region send their status to the

corresponding DR. the DR uses the status messages to perform local retransmissions to the

receivers); and

Paul fails to specifically disclose Multicast train ID, the number of groups and forward

error correction information.

Mizutani et al. discloses a multicast train ID information which is Used to identify a

multicast packet train *(Mizutani et al. Figure 3, packet ID);* information about the number of

groups of wireless terminals, the wireless terminals being connected to a wireless network and

receiving the multicast packets *(see Mizutani et al., figure 3, element 30, header, and figure 4,*

element 11, group management table)

forward error correction information which is used to correct an error of the multicast

packet train header *(Mizutani et al. , see figure 3, element 37, Error correction code, which*

detects and corrects a transmission error in the header)

Therefore, it would have been obvious to a person having ordinary skilled in the art at the

time the invention was made to provide Paul et al. with a multicast packet header that includes

Multicast group id and the number of groups because it helps to continue communication without

a break among the remaining terminals even if a given communication terminal moves out of

communication range (see Mizutani et al., column 2, lines 53-56).

5.   **Claim 6 and 13** rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al.

(European Patent Application Number 01303442.6) in view of Paul et al. (Reliable Multicast

Transport Protocol (RMTP)).

Regarding **Claim 6** Sato et al. discloses a multicast data retransmission method,

comprising the steps of:

(a) grouping wireless terminals based on distances between an access point and the

wireless terminals *(see Sato et al., page 3, paragraph [0021], grouping radio terminals in the*

service area) and amplitudes of signals output from the wireless terminals *(see Sato et al., page*

3, column 4, paragraph [0022], retransmission control method configured basis of quality of

communications between the information delivery apparatus and each of the radio terminals);

an

(b) selecting a repeater to retransmit multicast packets from each group and

retransmitting the multicast packets *(see Sato et al., page 3, column 3, lines 20-22, determining*

at least one radio terminal permitted to be placed in retransmission control).

wherein step (b) further comprises the steps of:

(b 1) selecting a wireless terminal which outputs a signal with the greatest amplitude as

the repeater by determining a status of a channel of the wireless terminal based on the amplitude

of signal output from the wireless terminal *(see Sato et al. , page 3, column 3, paragraph*

[0016], determining at least one radio terminal permitted to be placed in retransmission

control,)(paragraph [0022], the retransmission control method configured on the basis of a

quality of communication(greatest amplitude) between the information delivery apparatus

and each of the radio terminals,);

Sato et al. fails to specifically disclose determining the order in which repeaters

retransmit the multicast packets and repeating in the order.

Paul et al. discloses (b2) determining the order in which repeaters retransmit the multicast

packets *(see Paul et al., page 408, column 1, paragraph 3, the function of RMTP is to deliver*

packets from the sender to the receivers in sequence along the multicast tree); and

(b3) transmitting a retransmission command to the repeaters in the Order in which the

repeaters retransmit the multicast packets*(see Paul et al., page 414, column 1, paragraph 2,*

DR's retransmit lost packets to the receivers in there respective local regions).

Therefore, it would have been obvious to a person having ordinary skilled in the art at the

time the invention was made to provide Sato et al. with determining the order and repeating in

the order because this make the retransmission method more reliable.   .

Regarding **claim 13**, Paul et al. discloses everything claimed as applied above (*see claim*

6) In addition:

A computer readable medium having embodied thereon a computer program for the

multicast data retransmission method of claim 6 *(see Sato et al., Figure 5)*.

Response to Arguments

6.   Applicant's arguments, see pg 7-10, filed 11/7/2007, with respect to the rejection(s) of

claim(s) 1 and 2 under 35 USC 102(b) have been fully considered and are persuasive. Therefore,

the rejection has been withdrawn. However, upon further consideration, a new ground(s) of

rejection is made in view of Paul et al. (Reliable Multicast Transport Protocol (RMTP)) in view

of Toshimitsu et al. (US Patent Application Publication 2002/0021684).

Previous rejection of claims 11-13 under 35 USC 101 is withdrawn in view of

Applicant's amendment file May 16, 2007.

Applicant's arguments are not persuasive In the remarks on pg. 8 of the amendment, the

applicant contends that Paul et al. does not teach or suggest "receiving a retransmission

command from the access point and retransmitting the multicast packets to other wireless

terminals, irrespective of whether the wireless terminal receive the multicast packets" Paul et al.

disclose that packets are retransmitted and multicasted globally, see rejection claim 1 and 4.

In the remarks on pg. 8 of the amendment, the applicant contends that Sato does not teach

or suggest "repeater selecting unit, and selects the repeater to retransmit the multicast packet

from each group, in the order arranged by the repeater selecting and retransmission order

arranging unit."

Examiner respectfully disagrees Sato teaches that the information delivery control unit

controls what and how the packets are multicast, the multicast information is stored in the

memory unit under the control of element 24.

The argument that the limitation "determining the order and repeating the order "with

respect to claims 6 and 13 are different limitation as presented in claim 8. See rejections of 8-9

claims.

In the remarks on pg. 9 of the amendment, the applicant contends that Mizutani does not

teach or suggest "information about the number of multicast packet in each group which

indicates the number of multicast packet in each group"

Examiner respectfully disagrees Mizutani teaches as disclose in the figure 4, (terminal ID

1-A, 1-B, 4-C,) reads on information about the number of multicast packet as understood by

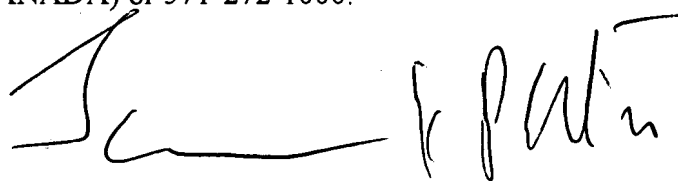examiner. See rejections of claim 10.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mon Cheri S. Davenport whose telephone number is 571-270-

1803. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MD/md
November 16, 2007

JAY K. PATEL
SUPERVISORY PATENT EXAMINER